

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

_____	)	
3V, INC., a Delaware corporation,	)	
	)	
Plaintiff,	)	
	)	CIVIL ACTION NO. _____
v.	)	
	)	
CIBA SPECIALTY CHEMICALS	)	
CORPORATION, a Delaware corporation,	)	
	)	
Defendant.	)	
_____	)	

**COMPLAINT**

***Jurisdiction and Venue***

1. This suit arises under the patent laws of the United States, 35 United States Code, and seeks review to remedy a final decision dated July 27, 2006, of the Board of Patent Appeals and Interferences of the United States Patent and Trademark Office (“Board”) in patent interference proceeding No. 105,262. This decision was partially adverse to plaintiff 3V Inc., awarding judgment on priority of invention against Plaintiff, 3V, Inc., and in favor of Defendant, CIBA Specialty Chemicals Corporation.

2. Review by this Court is specifically provided under 35 U.S.C. § 146 and 37 C.F.R. § 1.303. Jurisdiction of this action lies with this court under 28 U.S.C. § 1331 and 28 U.S.C. § 1338(a).

3. This matter is timely brought in view of the decision of the Board entered on July 27, 2006. No appeal has been taken to the United States Court of Appeals for the Federal Circuit. Venue is proper in this district pursuant to § 1391 (b) and (c).

*The Parties*

4. Plaintiff 3V, Inc. (“3V”) is a Delaware corporation having a principal place of business at 888 Woodstock Street, Georgetown, South Carolina. 3V, Inc. is the assignee of all right, title and interest in U.S. Patent 5,658,973 (the “ ‘973 Patent”), involved in the aforesaid interference. The ‘973 Patent names Giuseppe Raspanti of Bergamo, Italy, as inventor.

5. Upon information and belief, Defendant CIBA Specialty Chemicals Corporation (“CIBA”) is a corporation of the State of Delaware having a principal place of business located at 540 White Plains Road, Tarrytown, New York. CIBA may be served with process at the offices of its registered agent for service of process in Delaware, the Corporation Service Company, 2711 Centerville Road, Wilmington, DE 19808.

6. Upon information and belief, CIBA is the assignee of all right, title and interest to the invention relating to “Synergistic Stabilizer Mixture” which is disclosed and claimed in U.S. Patent Application Serial No. 10/081,291, filed February 22, 2002 (the “ ‘291 application”), which was accorded benefit of U.S. Application Serial No. 09/275,859, filed March 24, 1999, U.S. Application Serial No. 08/858,191, filed April 21, 1997, and U.S. Application Serial No. 08/588,164, filed January 18, 1996. The ‘291 application names Francois Gugumus as inventor.

***Interference Proceeding No. 105,262***

7. On May 24, 2005, the Board declared Interference No. 105,262 between 3V, Inc. (assignee of Junior Party, Giuseppe Raspanti and owner of the '973 Patent, involved in the interference) and CIBA (assignee of Senior Party, Francois Gugumus and owner of U.S. Patent Application Serial No. 10/081,291).

8. 3V, Inc. has all right, title and interest in the '973 Patent, which issued on August 19, 1997, and is the real party in interest in the interference. A copy of the '973 Patent is attached as Exhibit 1.

9. Upon information and belief, CIBA has all right, title and interest in the '291 application filed on February 22, 2002, and is the real party in interest as shown by papers filed by counsel for CIBA in the interference.

10. Count 1 of the interference reads as follows:

Count 1. A COMPOSITION according to claim 1 of Raspanti (5,658,973) comprising a compound a) and compound b) in a weight ratio of 1:1, wherein:

a) is a compound of formula (X) of claim 4 of Raspanti where:

r is 2 or 3,

R in formula (III) is hydrogen and

p is 2 to 20 and

b) is a compound of formula (V) of claim 4 of Raspanti where:

R is hydrogen or methyl,

n is 1 to 10 and

p is 2 to 50

or

a method for stabilizing synthetic polymers comprising the step of adding to a polyolefin an effective stabilizing amount of the COMPOSITION,

or

a stabilized polymer comprising a polyolefin and the COMPOSITION.

11. On July 27, 2006, the Board entered a final decision. In its final decision, the Board, among other things, erroneously, and contrary to law, denied 3V's Substantive Motion 3

and Substantive Motion 5 and erroneously, and contrary to law, granted CIBA's Responsive Motion 2.

12. On July 27, 2006, the Board entered a final decision in Interference No. 105,262 and erroneously, and contrary to law, denied 3V's Substantive Motion 3, seeking to declare CIBA's claims 16-27 as unpatentable under 35 U.S.C. § 135(b)(1). CIBA failed to present a claim to a composition comprising a compound having the structure of formula (X) as recited in claim 4 of the '973 Patent within one year from the issue date of the '973 Patent.

13. On July 27, 2006, the Board entered a final decision in Interference No. 105,262 and erroneously, and contrary to law, denied 3V's Substantive Motion 5, seeking pursuant to 37 C.F.R. § 41.12(a)(1)(ii) to change the benefit accorded for the contested subject matter in the interference. Later added claim 28, as well as claims 16-27, are not entitled to priority based upon any earlier filed application because the earlier filed applications do not "provide an enabling disclosure, of an invention encompassed by the Count, sufficiently to justify a finding of entitlement to priority."

14. On the same date in the same interference, the Board in its final decision erroneously, and contrary to law, granted CIBA's Responsive Motion 2 to add claim 28. CIBA failed to recite a definition of component e) in claim 28 that is based on the written description in the '291 application.

15. 3V preserves all the issues raised in these Motions as they relate to Count 1.

### **COUNT 1**

16. This is an action pursuant to 35 U.S.C. § 146 that 3V is entitled to certain patent claims in the '973 Patent.

17. 3V repeats and realleges the allegations contained in paragraphs 1-16, inclusive, as if fully set forth herein.

18. The decision of the Board in Interference No. 105,262 was erroneously entered, contrary to law, for all of the reasons stated in paragraphs 1-17 above.

WHEREFORE, PLAINTIFF prays that the Court grant:

- A. Leave to introduce the record of Interference No. 105,262 before the Board and to take discovery and introduce additional evidence to supplement the record in this action;
- B. *De novo* consideration of the Interference record, if introduced, and the supplemental evidence, by this Court with respect to the issues of patentability and priority as to Count 1 and other matters as referenced herein or which 3V asserts are related to this matter.
- C. Judgment awarding priority to Plaintiff 3V with respect to Count 1.
- D. Judgment ordering that (i) claims 16-27 of the '291 application are unpatentable under 35 U.S.C. § 135 (b)(1) and that (ii) claims 16-27 are not entitled to priority based upon any earlier application.
- E. Judgment ordering that (i) claim 28 may not be added to the '291 application and, if added, that (ii) claim 28 is unpatentable under 35 U.S.C. § 135 (b)(1) and that (iii) claim 28 is not entitled to priority based upon any earlier application of Gugumus.
- F. Judgment ordering that 3V is entitled to its '973 Patent containing all claims, that the Clerk of the Court shall issue a certified copy of said judgment for transmittal to the U.S. Patent and Trademark Office, and that the Director of the U.S.

Patent and Trademark Office shall be authorized to fully implement the contents of said order.

- G. Judgment ordering any further relief as may be equitable and/or appropriate in order to preserve the rights of 3V in all claims of the '973 Patent and to preserve the rights of 3V in any further proceedings on remand before the U.S. Patent and Trademark Office.

Dated: September 25, 2006

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US005658973A

# United States Patent [19]

## Raspanti

[11] **Patent Number:** **5,658,973**  
 [45] **Date of Patent:** **Aug. 19, 1997**

### [54] COMPOSITIONS FOR THE STABILIZATION OF SYNTHETIC POLYMERS

[75] Inventor: **Giuseppe Raspanti**, Bergamo, Italy

[73] Assignee: **3V Inc.**, Weehawken, N.J.

[21] Appl. No.: **507,197**

[22] Filed: **Jul. 26, 1995**

[51] Int. Cl.<sup>6</sup> ..... **C08K 5/54**; C08K 5/3492;  
C08K 5/3435

[52] U.S. Cl. .... **524/99**; 252/405; 524/100;  
524/102; 524/103

[58] Field of Search ..... 524/100, 99, 102,  
524/103; 252/405

### [56] References Cited

#### U.S. PATENT DOCUMENTS

4,086,204	4/1978	Cassandrini et al. ....	544/198
4,108,829	8/1978	Cassandrini et al. ....	544/198
4,233,412	11/1980	Rody et al. ....	525/167
4,331,586	5/1982	Hardy ....	524/97
4,477,615	10/1984	Raspanti et al. ....	524/100
4,692,486	9/1987	Gugumus ....	524/100
4,863,981	9/1989	Gugumus ....	524/100
4,927,930	5/1990	Cantatore et al. ....	544/198
4,933,451	6/1990	Cantatore et al. ....	524/100
5,021,485	6/1991	Gugumus ....	524/100

#### FOREIGN PATENT DOCUMENTS

343717	11/1989	European Pat. Off. .
57-38589	8/1982	Japan .

### OTHER PUBLICATIONS

Tomoyuki Kurumada, et al., "Synergism of Hindered Amine Light Stabilizers and UV-Absorbers", Polymer Degradation and Stability 19 (1987) 263-272.

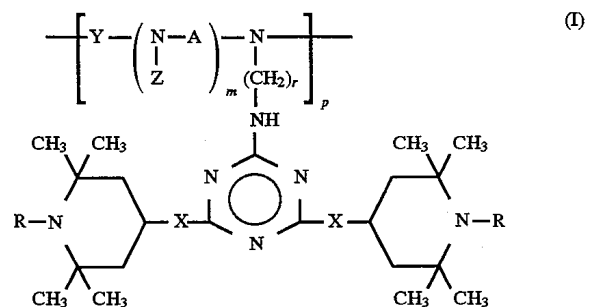
Primary Examiner—Veronica P. Hoke

Attorney, Agent, or Firm—Griffin, Butler, Whisenhunt & Kurtosy

### [57] ABSTRACT

A composition for stabilizing synthetic polymers consisting of a blend of

a) at least a derivative of a high molecular weight polymethylpiperidine of formula (I)



wherein the groups are as defined hereinafter, and

b) at least one other HALS stabilizer wherein the groups are as defined hereinafter is disclosed. These compositions show photostabilizing and antioxidant properties.

**15 Claims, No Drawings**

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COMPOSITIONS FOR THE STABILIZATION  
OF SYNTHETIC POLYMERS

The present invention relates to compositions consisting of mixtures of two or more different derivatives of high molecular weight polymethylpiperidine and to their use as stabilizing agents for synthetic polymers.

## BACKGROUND OF THE INVENTION

The use of compounds containing the polymethylpiperidine group, and mainly 2,2,6,6-tetramethyl-4-piperidine, for the photostabilization of polymers is well known and to this end a wide literature exists.

Generally this class of stabilizing agents is divided into two groups, namely those having low molecular weight (about 700) and those with high molecular weight (higher than 700).

A detailed disclosure of some stabilizing agents of this class, the so called hindered amines, of their different kinds and of their applicative characteristics is found in Gaechter-Mueller/Taschenbuch der Kunststoff-Additive, 2 Ausgabe 1983 pagg. 144-198.

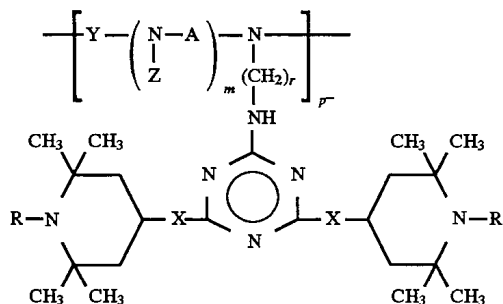
U.S. Pat. Nos. 4,692,486, 5,021,485 and EP 0080431 disclose some synergistic mixtures of derivatives of low and high molecular weight polyalkylpiperidines as photostabilizing agents for polymers. U.S. Pat. No. 4,863,981 discloses also mixtures containing two different derivatives of polymethylpiperidine, both of them having high molecular weight, as photostabilizing agents for polymers.

It has surprisingly been found that new particular combinations of compounds, all of them having high molecular weight, containing polymethylpiperidine groups, in addition to synergistic properties as photostabilizing agents, also show synergistic activity in the long term heat stabilization of synthetic polymers. As used herein, the wording "long term heat stabilization" is intended to mean that the polymer is stabilized against the degradation which occurs during the time of use of the polymer itself. As far as it is known to the applicant, said synergistic activity in the long term heat stabilization was not disclosed nor suggested in the prior art.

## DISCLOSURE OF THE INVENTION

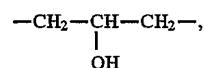
An object of the present invention is a composition for the stabilization of synthetic polymers consisting of a mixture of:

a) at least a compound of formula (I)

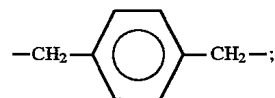


wherein R is hydrogen or methyl, X is oxygen or the N-R<sub>1</sub> group, in which R<sub>1</sub> is hydrogen or a C<sub>1</sub>-C<sub>12</sub> straight or branched alkyl, r is a number ranging from 2 to 8, included; A is -(CH<sub>2</sub>)<sub>n</sub>-, in which n can be a number from 2 to 8, the group

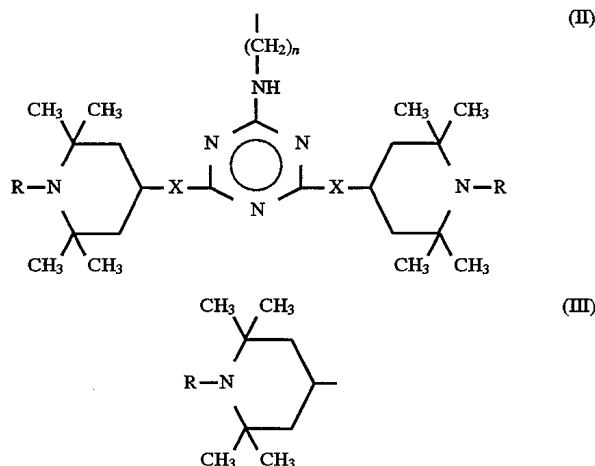
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or the group



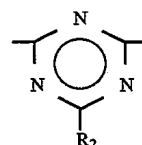
Z is hydrogen, C<sub>1</sub>-C<sub>18</sub> alkyl, the group of formula (II) or the piperidine of formula (III):



wherein R, X and n have the above defined meaning;

m is zero or 1;

Y, when m is zero, has the same meaning of A, when m is 1 can have the same meaning of A or is one of the following groups



-CO-R<sub>3</sub>-CO-; -CO-NH-R<sub>4</sub>-NH-CO- in which R<sub>2</sub> is an optionally substituted aryl residue, having from 6 to 14 carbon atoms or the



group in which R<sub>5</sub> and R<sub>6</sub> can be the same or different and are hydrogen, a C<sub>1</sub>-C<sub>18</sub> straight or branched alkyl group, a cycloalkyl group having from 5 to 12 carbon atoms, an aryl group having from 6 to 12 carbon atoms, an aralkyl group having from 7 to 12 carbon atoms; the piperidine group of formula (III) or, together the nitrogen atom which they are linked to, can form a heterocyclic ring having from 5 to 7 members, optionally containing also oxygen as heteroatom;

R<sub>3</sub> is phenylene or -(CH<sub>2</sub>)<sub>n</sub>-;

R<sub>4</sub> is toluylene, xylylene or -(CH<sub>2</sub>)<sub>n</sub>-, in which n has the above defined meaning;

p can vary from 2 to 100;

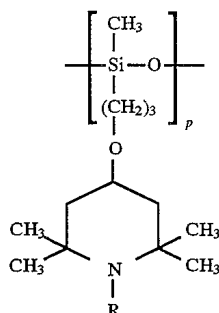
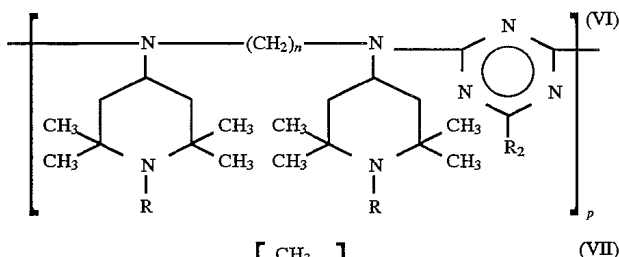
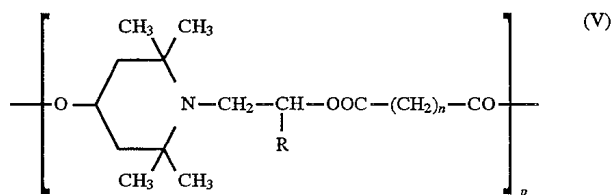
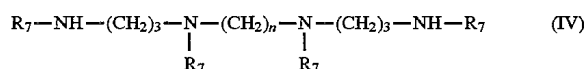
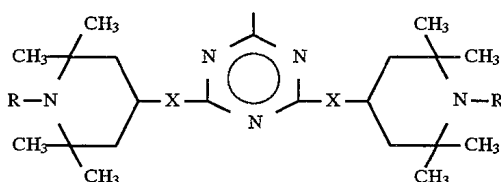
the terminal groups can be Cl or H; and



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b) at least a compound of formula (IV), (V); (VI) or (VII)

wherein  $R_7$  is a group of formula

wherein X and R are as above defined;

R,  $R_2$ , n and p have the above meaning, the terminal groups can be hydrogen for compounds (V), chlorine or hydrogen for compounds (VI) and methyl for compounds (VII).

Examples of  $C_1$ - $C_{18}$  straight or branched alkyl group are methyl, ethyl, n-propyl, isopropyl, n-butyl, tert-butyl, pentyl, neo-pentyl, hexyl, heptyl, decyl, dodecyl, hexadecyl, octadecyl.

Examples of optionally substituted aryl group having from 6 to 14 carbon atoms are phenyl, tolyl, o-, m-, p-xylyl.

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Examples of cycloalkyl group having from 5 to 12 carbon atoms are cyclopentyl, cyclohexyl, cyclododecyl.

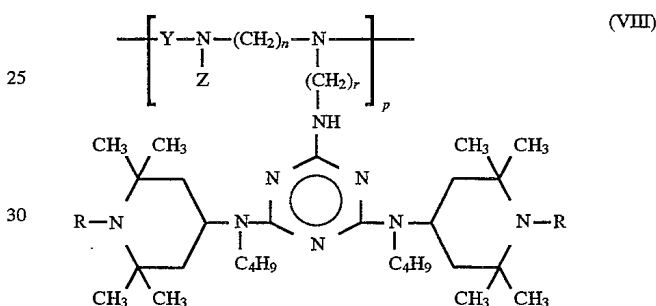
Examples of aralkyl group having from 7 to 12 carbon atoms are benzyl, 4-tert-butylbenzyl.

Examples of heterocyclic group having from 5 to 7 members are: pyrrolidine, piperidine, hexamethyleneimine, morpholine.

The compounds of formula (I), (IV), (V), (VI) and (VII) are known; their methods of preparation as well as their uses as stabilizing agents are described in patents U.S. Pat. Nos. 4,477,615, 4,233,412, 4,108,829, 4,086,204, 4,331,586, EP 0255181.

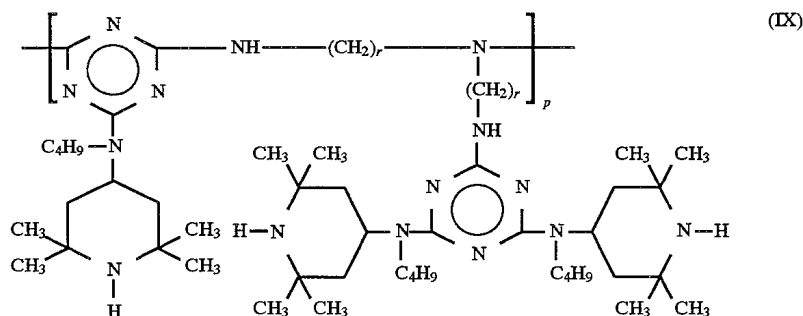
However, the stabilizing compositions according to the present invention show a photoprotective activity higher than the single components of formula (I) or (IV-VII).

In a first preferred embodiment of the present invention, the component a) is represented by the compound of formula (VIII)



wherein Z, Y, R, n and p have the above defined meaning; r is 2 or 3.

In a second preferred embodiment of the present invention, the component a) is represented by the compound of formula (IX)

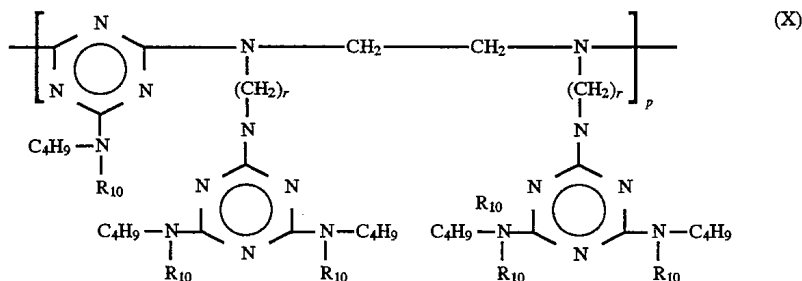


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wherein  $r$  and  $p$  are as above defined.

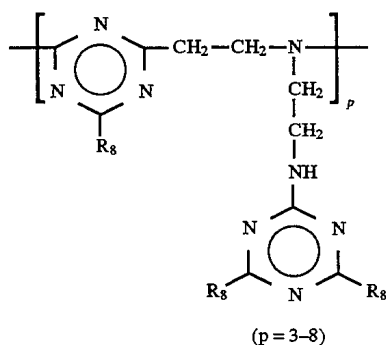
In a third preferred embodiment of the present invention, the component a) is represented by the compound of formula (X)



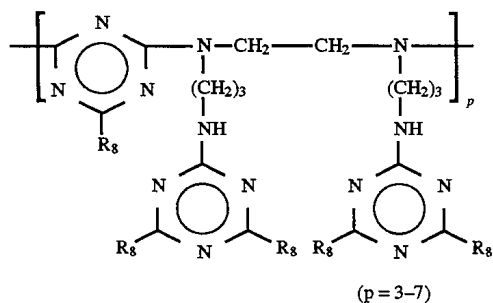
wherein  $r$  and  $p$  are as above defined,  $R_{10}$  is a group of formula (III).

An example of compound of formula IV is:

Examples of compounds of formula I are:

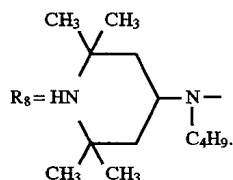


compound 1



compound 2

wherein



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25

30

wherein

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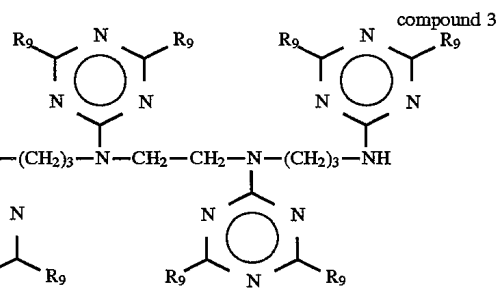
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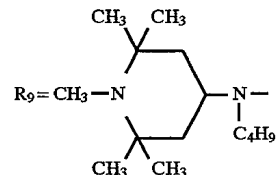
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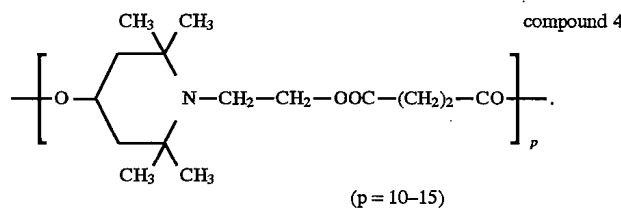
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compound 3



An example of compound of formula V is:



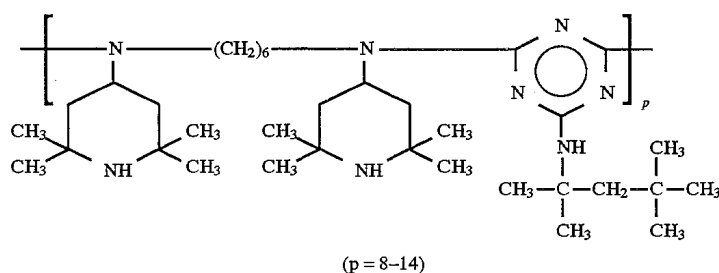
compound 4

Examples of compounds of formula VI are:

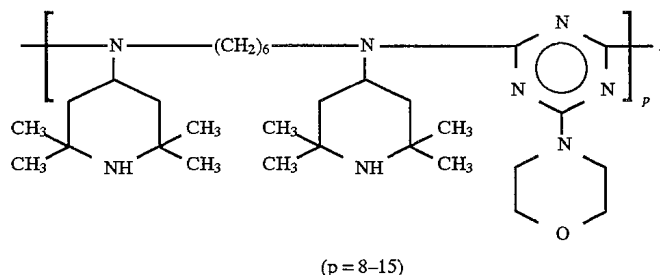
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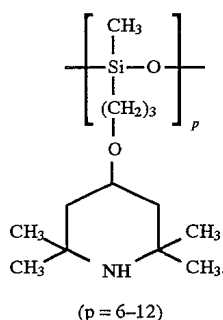


compound 5



compound 6

An example of compound of formula VII is:



compound 7

The concentration of the stabilizing compositions according to the present invention in the polymers can generally vary from 0.01 to 5% and preferably from 0.05 to 2% with respect to the weight of the polymer. Nevertheless, the stabilizing mixture can be added to the polymers also in very high amounts, for example 5-25% by weight, for the preparation of masterbatches.

The incorporation can be carried out according to various methods, for example by dry mixing the polymer with the stabilizing mixture or said mixture can be added to a suspension of the polymer to be stabilized in a suitable solvent and subsequently evaporating off the solvent.

Subsequently the polymers containing the stabilizing mixture are extruded or treated according to methods usually known in the art.

According to the present invention the compositions of compounds of formula (I) and respectively of formula (IV)-(VII) are used for the stabilization of synthetic polymers, particularly of polyolefins such as for example low and high density polyethylene, polypropylene, polymethylpentene, polyisoprene, polystyrene, polymethylstyrene and copolymers thereof and/or with other vinyl monomers as for example acrylonitrile, vinyl acetate, acryl esters.

The stabilizing compositions according to the present invention can be used also together with other additives commonly used in the technology of the synthetic polymers, such as for example: antioxidants, for example those belonging to the classes of phenols, thioethers, phosphites and phosphonites; UV-absorber, for example oxanilides, benzotriazole and benzophenone derivatives; nickel complexes;

metal deactivators, for example oxalic acid amides, plasticizers, antistatic agents, pigments, optical bleaching agents, flame retarders.

The following examples further disclose the present invention.

#### EXAMPLE 1

1.000 g of low density polyethylene (Riblene EF 2100 V-Enichem®), 2 g of n-octadecyl-3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate, 1 g of calcium stearate and 1 g of a stabilizing agent, according to the present invention, or of a mixture thereof in 50:50 w/w ratio, were mixed homogeneously. The mixtures were extruded at 190° C. and transformed into pellets. From these pellets, by means of pressure forming at 200° C., films of 0.2 mm thickness were obtained.

Samples of these films were subjected to UV radiation in a Weatherometer WOM Ci-65® at a black panel temperature of 63° C. In the irradiated samples the increase of the carbonyl band at 5.85 nm in the infrared was measured and the T-0.1, i.e. the time necessary to give an increase of 0.1 of the carbonyl band, was determined. The results are reported in the following Table 1.

TABLE 1

Stabilizing agent	T 0.1 (hours)
Without stabilizing agent	300
Compound 1	2100
Compound 2	2000
Compound 3	1950
Compound 4	1750
Compound 5	2100
Compound 7	1650
Compounds 1 + 3	2750
Compounds 1 + 4	2850
Compounds 1 + 5	2650
Compounds 2 + 5	2800
Compounds 1 + 7	2600
Compounds 4 + 5 (according to US 4 863 981)	2800

#### EXAMPLE 2

Homogeneous mixtures, consisting of 1,000 g of polypropylene, (Moplen FLF 20-Himont®), 1 g of 1,3,5-tris-(3,5-di-tert-butyl-4-hydroxybenzyl)isocyanurate, 0.5 g

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of calcium stearate and 2 g of a stabilizing agent or of a 50:50 mixture thereof were prepared. The mixtures were extruded at 250° C. and granulated. From these, by means of pressure forming at 260° C., 1 mm thickness-test pieces were obtained.

The so obtained test pieces were subjected to atmospheric oxygen action by heating at 130° C. in a forced air circulation oven.

The degradation was evaluated by determining the time necessary for the "chalky" appearance on test pieces.

The results are reported in the following Table 2.

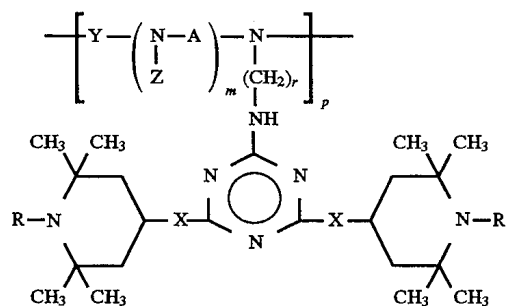
TABLE 2

Stabilizing agent	T (days)
Without stabilizing agent	34
Compound 1	55
Compound 2	57
Compound 3	49
Compound 4	54
Compound 5	57
Compound 7	41
Compounds 1 + 3	85
Compounds 2 + 4	81
Compounds 1 + 5	80
Compounds 2 + 5	78
Compounds 1 + 7	76
Compounds 4 + 5 (according to US 4 863 981)	58

**I claim:**

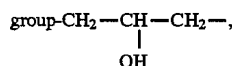
1. A composition for the stabilization of synthetic polymers comprising an about 1:1 ratio of the following components a) and b) wherein:

a) is at least one compound of formula (I)

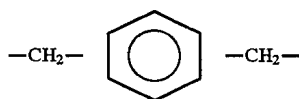


wherein R is hydrogen or methyl, X is oxygen or the group N—R<sub>1</sub>, in which R<sub>1</sub> is hydrogen or C<sub>1</sub>–C<sub>12</sub> straight or branched alkyl group, r is a number ranging from 2 to 8, included;

A is  $-(\text{CH}_2)_n-$ , in which n can be a number from 2 to 8. the

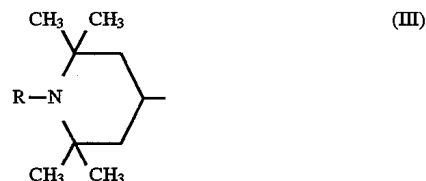
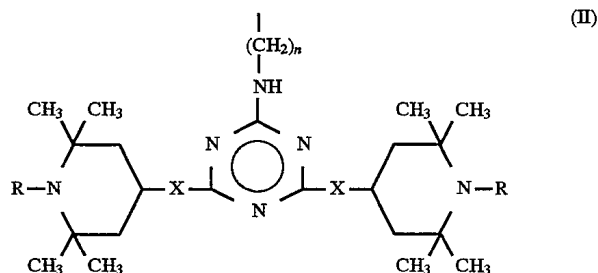


or the group



Z is hydrogen, C<sub>1</sub>-C<sub>18</sub> alkyl, the group of formula (II) or the piperidine of formula (III)

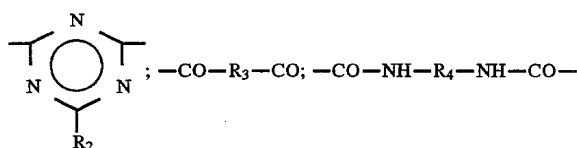
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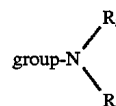
wherein R, X and n have the meaning above defined;

`m` is zero or 1:

Y, when m is zero, has the same meaning of A, when m is 1 can have the same meaning of A or is one of the following groups



in which R<sub>2</sub> is an optionally substituted aryl residue, having from 6 to 14 carbon atoms or the



in which R<sub>5</sub> and R<sub>6</sub> can be the same or different and are hydrogen, a C<sub>1</sub>–C<sub>18</sub> straight or branched alkyl group, a cycloalkyl group having from 5 to 12 carbon atoms, an aryl group having from 6 to 12 carbon atoms, an aralkyl group having from 7 to 12 carbon atoms; the piperidine group of formula (III) or, together the nitrogen atom, can form a 5 to 7 member heterocyclic ring, optionally containing oxygen as heteroatom:

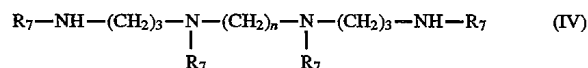
R<sub>3</sub> is phenylene or  $-(CH_2)_n-$ ;

$R_4$  is toluylene, xylylene or  $-(CH_2)_n-$ , in which n has the above defined meaning,

p can range from 2 to 100;

the terminal groups can be Cl or H; and

b) is at least one compound of formula (IV), (V); (VI) or (VII)

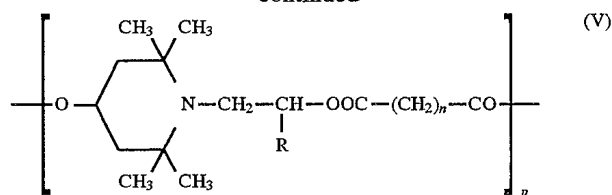


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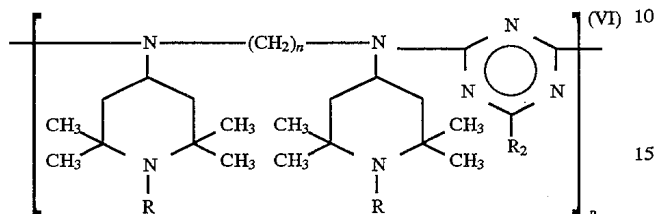
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(V)

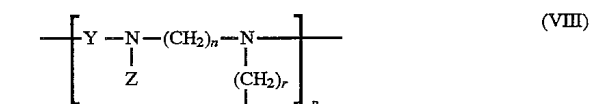
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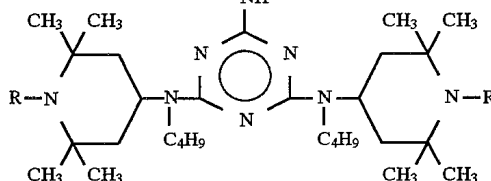
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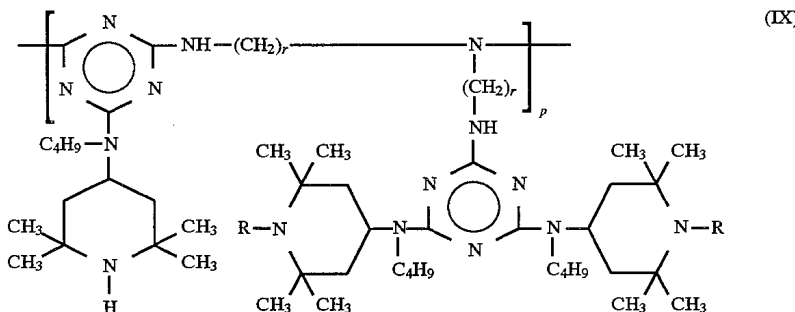


(VIII)



wherein Z, Y, R, n and p are as above defined, r is 2 or 3.

3. A composition according to claim 1, wherein said compound a) is a compound of formula (IX), and said compound b) is a compound of formula (IV)–(VII)

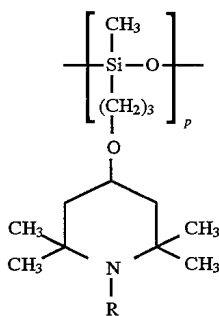


(IX)

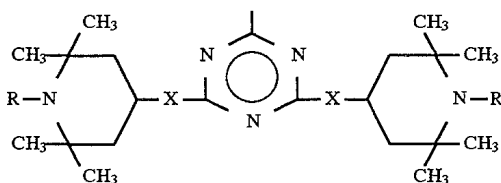
wherein r and p are as above defined.

4. A composition according to claim 1, wherein a) is a compound of formula (X) and b) is a compound of formula (IV)-(VII)

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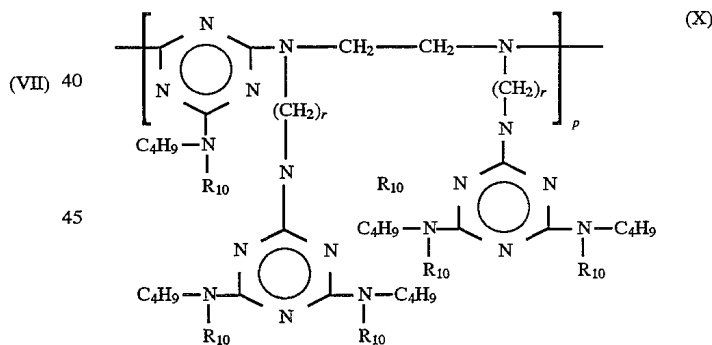


wherein R<sub>7</sub> is a group of formula

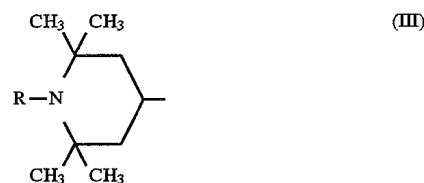


wherein R, X, n and p are as above identified.

2. A composition according to claim 1, wherein said compound a) is a compound of formula (VIII), and said compound b) is a compound of formula (IV)–(VII)

 $(X)$ 

wherein r and p are as above defined and  $R_{10}$  is a group of formula (III)



(III)

wherein R is as above defined.

5. Masterbatch for the stabilization of synthetic polymers containing from 5 to 25% by weight of composition of claim 1.

6. A composition according to claim 1, consisting of a) and b).

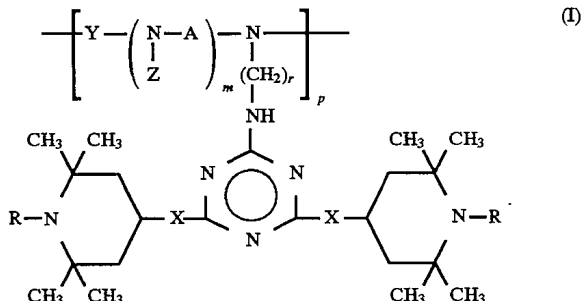
7. A method for stabilizing synthetic polymers, comprising the step of adding to a polyolefin an effective stabilizing

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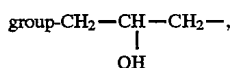
amount of a composition comprising an about 1:1 ratio of the following components a) and b) wherein:

a) is at least one compound of formula (I)

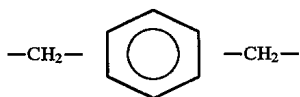


wherein R is hydrogen or methyl, X is oxygen or the group  $\text{N}-\text{R}_1$ , in which  $\text{R}_1$  is hydrogen or  $\text{C}_1-\text{C}_{12}$  straight or branched alkyl group, r is a number ranging from 2 to 8, included;

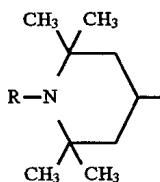
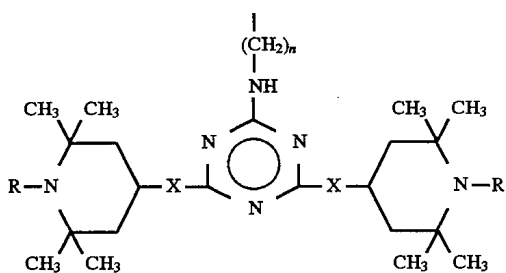
A is  $-(\text{CH}_2)_n-$ , in which n can be a number from 2 to 8, the



or the group



Z is hydrogen,  $\text{C}_1-\text{C}_{18}$  alkyl, the group of formula (II) or the piperidine of formula (III)

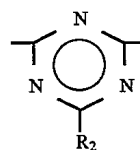


wherein R, X and n have the meaning above defined;

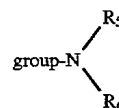
m is zero or 1;

Y, when m is zero, has the same meaning of A, when m is 1 can have the same meaning of A or is one of the following groups

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$-\text{CO}-\text{R}_3-\text{CO}-$ ;  $-\text{CO}-\text{NH}-\text{R}_4-\text{NH}-\text{CO}-$  in which  $\text{R}_2$  is an optionally substituted aryl residue, having from 6 to 14 carbon atoms or the



in which  $\text{R}_5$  and  $\text{R}_6$  can be the same or different and are hydrogen, a  $\text{C}_1-\text{C}_{18}$  straight or branched alkyl group, a cycloalkyl group having from 5 to 12 carbon atoms, an aryl group having from 6 to 12 carbon atoms, an aralkyl group having from 7 to 12 carbon atoms; the piperidine group of formula (III) or, together the nitrogen atom, can form a 5 to 7 member heterocyclic ring, optionally containing oxygen as heteroatom;

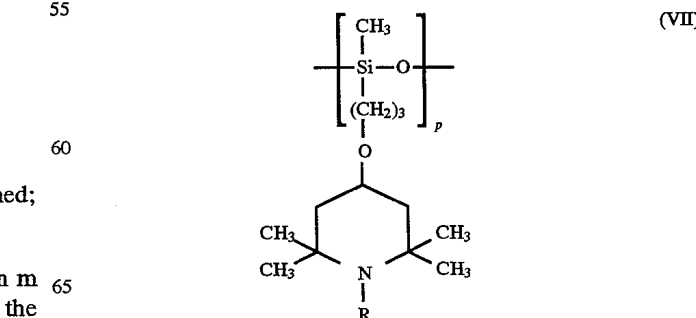
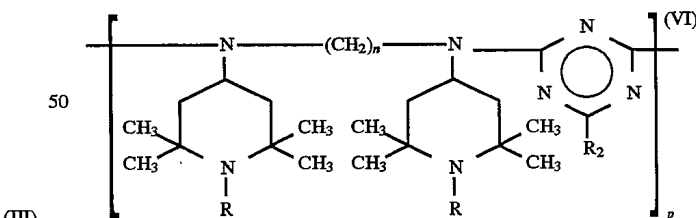
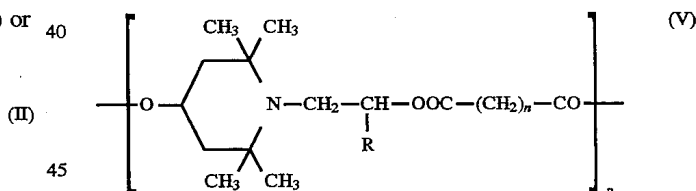
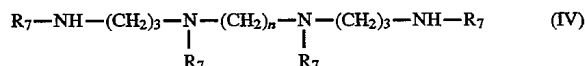
$\text{R}_3$  is phenylene or  $-(\text{CH}_2)_n-$ ;

$\text{R}_4$  is toluylene, xylylene or  $-(\text{CH}_2)_n-$ , in which n has the above defined meaning,

p can range from 2 to 100;

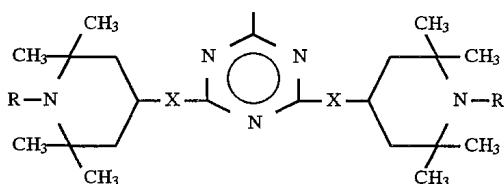
the terminal groups can be Cl or H; and

b) at least a compound of formula (IV), (V); (VI) or (VII)



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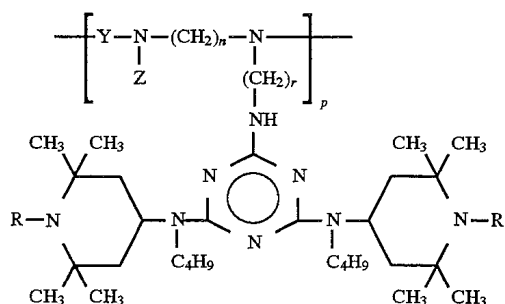
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wherein R<sub>7</sub> is a group of formula

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wherein R, X, n and p are as above identified.

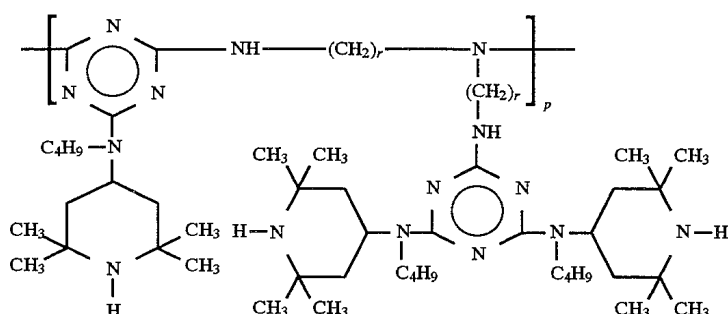
8. A method for stabilizing synthetic polymers, according to claim 7, wherein said compound a) is a compound of formula (VIII),



(VIII)

wherein X, Y, R, n and p are as above defined, r is 2 or 3.

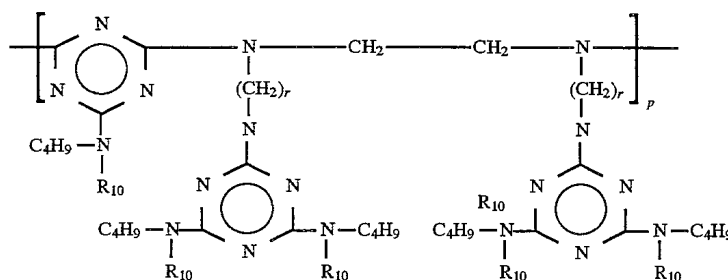
9. A method according to claim 7, wherein said compound a) is a compound of formula (IX), and said compound b) is a compound of formula (IV)-(VII)



(IX)

wherein r and p are as above defined.

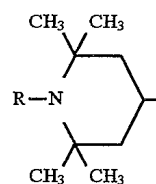
10. A method according to claim 7, wherein a) is a compound of formula (X) and b) a compound of formula (IV)-(VII)



(X)

wherein r and p are as above defined and R<sub>10</sub> is a group of formula (III)

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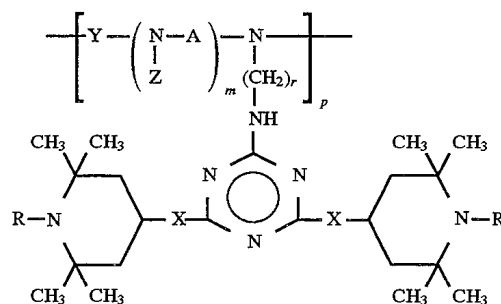
(III)

wherein R is as above defined.

11. A stabilized polymer comprising a polyolefin and a composition for the stabilization of synthetic polymers comprising an about 1:1 ratio of the following components a) and b) wherein:

a) is at least one compound of formula (I)

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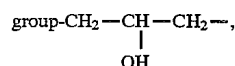


(I)

wherein R is hydrogen or methyl. X is oxygen or the group N-R<sub>1</sub>, in which R<sub>1</sub> is hydrogen or C<sub>1</sub>-C<sub>12</sub> straight or branched alkyl group, r is a number ranging from 2 to 8, included;

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A is -(CH<sub>2</sub>)<sub>n</sub>-, in which n can be a number from 2 to 8, the

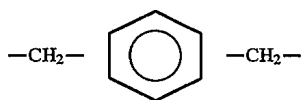


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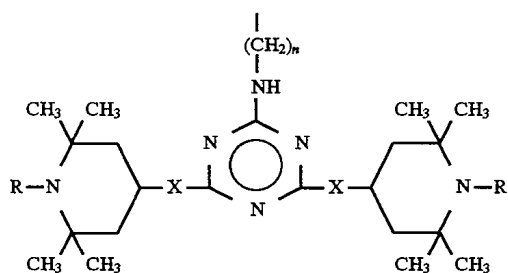
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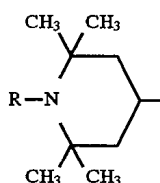
or the group



Z is hydrogen, C<sub>1</sub>-C<sub>18</sub> alkyl, the group of formula (II) or the piperidine of formula (III)



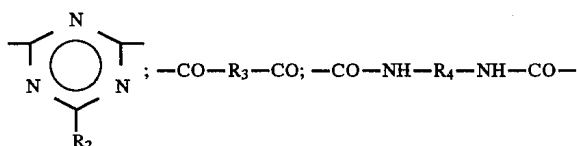
(II)



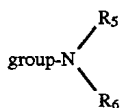
(III)

wherein R, X and n have the meaning above defined;  
m is zero or 1;

Y, when m is zero, has the same meaning of A, when m is 1 can have the same meaning of A or is one of the following groups



in which R<sub>2</sub> is an optionally substituted aryl residue, having from 6 to 14 carbon atoms or the



in which R<sub>5</sub> and R<sub>6</sub> can be the same or different and are hydrogen, a C<sub>1</sub>–C<sub>18</sub> straight or branched alkyl group, a cycloalkyl group having from 5 to 12 carbon atoms, an aryl group having from 6 to 12 carbon atoms, an aralkyl group having from 7 to 12 carbon atoms; the piperidine group of formula (III) or, together the nitrogen atom, can form a 5 to 7 member heterocyclic ring, optionally containing oxygen as heteroatom;

R<sub>3</sub> is phenylene or —(CH<sub>2</sub>)<sub>n</sub>—;

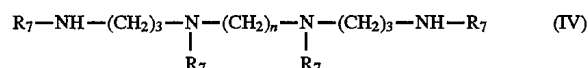
R<sub>4</sub> is toluylene, xylylene or —(CH<sub>2</sub>)<sub>n</sub>—, in which n has the above defined meaning.

p can range from 2 to 100;

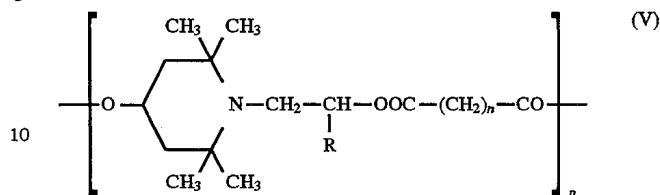
the terminal groups can be Cl or H; and

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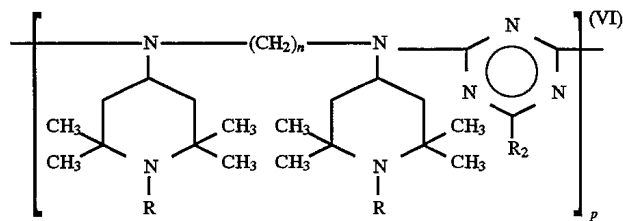
b) at least a compound of formula (IV), (V); (VI) or (VII)



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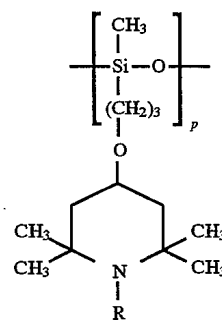


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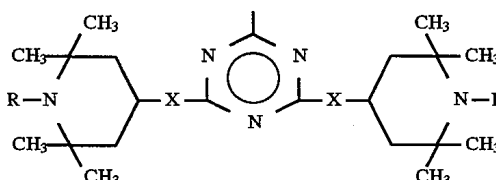


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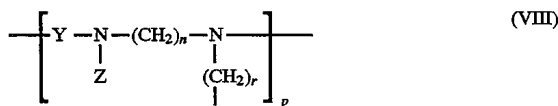
wherein R<sub>7</sub> is a group of formula



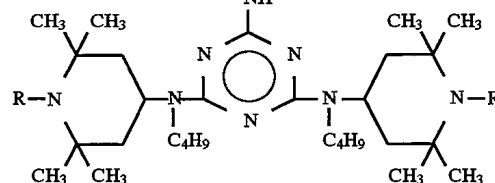
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wherein R, X, n and p are as above identified.

12. A stabilized polymer according to claim 11 wherein said compound a) is a compound of formula (VIII), and said compound b) is a compound of formula (IV)–(VII)



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wherein Z, Y, R, n and p are as above defined, r is 2 or 3.

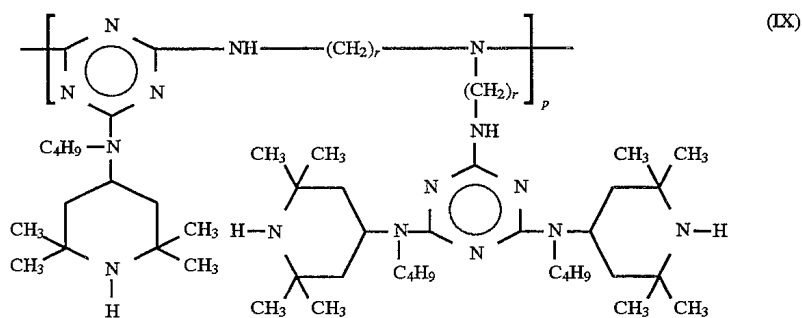
65 **13.** A stabilized polymer according to claim 11 wherein  
said compound a) is a compound of formula (IX), and said  
compound b) is a compound of formula (IV)–(VII)



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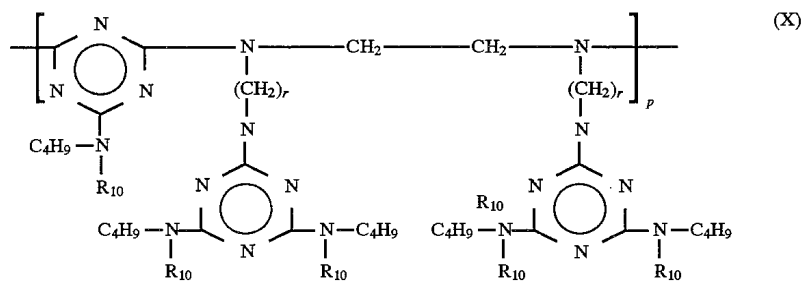
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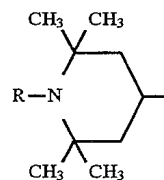


wherein  $r$  and  $p$  are as above defined.

14. A stabilized polymer according to claim 11 wherein a) is a compound of formula (X) and b) is a compound of formula (IV)-(VII)



wherein  $r$  and  $p$  are as above defined, and  $R_{10}$  is a group of formula (III)



15 wherein  $R$  is as above defined.

15. A stabilized polymer according to claim 11 wherein said composition is present in an amount from 0.01 to 5% w-w.

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## CIVIL COVER SHEET

JS 44 (Rev. 11/04)

The JS 44 civil cover sheet and the information contained herein neither replace nor supplement the filing and service of pleadings or other papers as required by law, except as provided by local rules of court. This form, approved by the Judicial Conference of the United States in September 1974, is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet. (SEE INSTRUCTIONS ON THE REVERSE OF THE FORM)

<b>I (a) PLAINTIFFS</b> 3V, Inc. <b>(b)</b> County of Residence of First Listed Plaintiff: New Castle (Registered Agent) (EXCEPT IN U.S. PLAINTIFF CASES)  <b>(c)</b> Attorney's (firm Name, Address, and Telephone Number) Joseph Grey (ID 2358) STEVENS & LEE, P.C. 1105 North Market Street, 7th Floor Wilmington, DE 19801 TEL: (302) 654-5180	<b>DEFENDANTS</b> CIBA Specialty Chemicals Corporation County of Residence of First Listed Defendant: New Castle (Registered Agent) (IN U.S. PLAINTIFF CASES ONLY)  NOTE: IN LAND CONDEMNATION CASES, USE THE LOCATION OF THE LAND INVOLVED Attorneys (If Known)  Not Known
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<b>II. BASIS OF JURISDICTION</b> (Place an "X" in One Box Only)	<b>III. CITIZENSHIP OF PRINCIPAL PARTIES</b> (Place an "X" in One Box for Plaintiff and One Box for Defendant)																				
<table style="width: 100%;"> <tr> <td><input type="checkbox"/> 1 U.S. Government Plaintiff</td> <td><input checked="" type="checkbox"/> 3 Federal Question (U.S. Government Not a Party)</td> </tr> <tr> <td><input type="checkbox"/> 2 U.S. Government Defendant</td> <td><input type="checkbox"/> 4 Diversity (Indicate Citizenship of Parties in Item III)</td> </tr> </table>	<input type="checkbox"/> 1 U.S. Government Plaintiff	<input checked="" type="checkbox"/> 3 Federal Question (U.S. Government Not a Party)	<input type="checkbox"/> 2 U.S. Government Defendant	<input type="checkbox"/> 4 Diversity (Indicate Citizenship of Parties in Item III)	<table style="width: 100%;"> <tr> <th style="text-align: left;">PTF</th> <th style="text-align: left;">DEF</th> <th style="text-align: left;">PTF</th> <th style="text-align: left;">DEF</th> </tr> <tr> <td>Citizen of This State <input type="checkbox"/> 1</td> <td><input type="checkbox"/> 1</td> <td>Incorporated or Principal Place of Business In This State <input type="checkbox"/> 4</td> <td><input type="checkbox"/> 4</td> </tr> <tr> <td>Citizen of Another State <input type="checkbox"/> 2</td> <td><input type="checkbox"/> 2</td> <td>Incorporated and Principal Place of Business In Another State <input type="checkbox"/> 5</td> <td><input type="checkbox"/> 5</td> </tr> <tr> <td>Citizen or Subject of a Foreign Country <input type="checkbox"/> 3</td> <td><input type="checkbox"/> 3</td> <td>Foreign Nation <input type="checkbox"/> 6</td> <td><input type="checkbox"/> 6</td> </tr> </table>	PTF	DEF	PTF	DEF	Citizen of This State <input type="checkbox"/> 1	<input type="checkbox"/> 1	Incorporated or Principal Place of Business In This State <input type="checkbox"/> 4	<input type="checkbox"/> 4	Citizen of Another State <input type="checkbox"/> 2	<input type="checkbox"/> 2	Incorporated and Principal Place of Business In Another State <input type="checkbox"/> 5	<input type="checkbox"/> 5	Citizen or Subject of a Foreign Country <input type="checkbox"/> 3	<input type="checkbox"/> 3	Foreign Nation <input type="checkbox"/> 6	<input type="checkbox"/> 6
<input type="checkbox"/> 1 U.S. Government Plaintiff	<input checked="" type="checkbox"/> 3 Federal Question (U.S. Government Not a Party)																				
<input type="checkbox"/> 2 U.S. Government Defendant	<input type="checkbox"/> 4 Diversity (Indicate Citizenship of Parties in Item III)																				
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Citizen or Subject of a Foreign Country <input type="checkbox"/> 3	<input type="checkbox"/> 3	Foreign Nation <input type="checkbox"/> 6	<input type="checkbox"/> 6																		

IV. NATURE OF SUIT (Place an "X" in One Box Only)																									
<table style="width: 100%;"> <tr> <th style="text-align: left;">CONTRACT</th> <th style="text-align: left;">TORTS</th> </tr> <tr> <td style="vertical-align: top;"> <input type="checkbox"/> 110 Insurance  <input type="checkbox"/> 120 Marine  <input type="checkbox"/> 130 Miller Act  <input type="checkbox"/> 140 Negotiable Instrument  <input type="checkbox"/> 150 Recovery of Overpayment &amp; Enforcement of Judgement  <input type="checkbox"/> 151 Medicare Act  <input type="checkbox"/> 152 Recovery of Defaulted Student Loan (Excl. Veterans)  <input type="checkbox"/> 153 Recovery of Overpayment of Veteran's Benefits  <input type="checkbox"/> 160 Stockholder's Suits  <input type="checkbox"/> 190 Other Contract  <input type="checkbox"/> 195 Contract Product Liability  <input type="checkbox"/> 196 Franchise         </td> <td style="vertical-align: top;"> <table style="width: 100%;"> <tr> <th style="text-align: left;">PERSONAL INJURY</th> <th style="text-align: left;">PERSONAL INJURY</th> </tr> <tr> <td style="vertical-align: top;"> <input type="checkbox"/> 310 Airplane  <input type="checkbox"/> 315 Airplane Product Liability  <input type="checkbox"/> 320 Assault, Libel &amp; Slander  <input type="checkbox"/> 330 Federal Employers' Liability  <input type="checkbox"/> 340 Marine  <input type="checkbox"/> 345 Marine Product Liability  <input type="checkbox"/> 350 Motor Vehicle  <input type="checkbox"/> 355 Motor Vehicle Product Liability  <input type="checkbox"/> 360 Other Personal Injury           </td> <td style="vertical-align: top;"> <input type="checkbox"/> 362 Personal Injury-Med. 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<b>V. ORIGIN</b> (Place an "X" in One Box Only)							
<input checked="" type="checkbox"/> 1 Original Proceeding	<input type="checkbox"/> 2 Removed from State Court	<input type="checkbox"/> 3 Remanded from Appellate Court	<input type="checkbox"/> 4 Reinstated or Reopened	<input type="checkbox"/> 5 Transferred from another district (specify)	<input type="checkbox"/> 6 Multidistrict Litigation	<input type="checkbox"/> 7 Appeal to District Judge from Magistrate Judgment	

<b>VI. CAUSE OF ACTION</b>	Cite the U.S. Civil Statute under which you are filing: 35 U. S. C. § 146.  Brief description of cause: Action for review to remedy a final decision of the Board of Patent Appeals and Interferences of the United States Patent and Trademark Office.
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<b>VII. REQUESTED IN COMPLAINT:</b>	<input type="checkbox"/> CHECK IF THIS IS A CLASS ACTION UNDER F.R.C.P. 23	DEMAND Unliquidated	CHECK YES only if demanded in complaint: JURY DEMAND: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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<b>VIII. RELATED CASE(S) IF ANY</b>	None Known	JUDGE _____	DOCKET NUMBER _____
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DATE: September 25, 2006 SIGNATURE OF ATTORNEY OF RECORD 10 2 3 5 8

<b>FOR OFFICE USE ONLY</b>			
RECEIPT # _____	AMOUNT _____	APPLYING IFP _____	JUDGE _____ MAG. JUDGE _____

AO FORM 85 RECEIPT (REV. 9/04)

United States District Court for the District of Delaware


Civil Action No. 06 - 593

**ACKNOWLEDGMENT**  
**OF RECEIPT FOR AO FORM 85**

**NOTICE OF AVAILABILITY OF A**  
**UNITED STATES MAGISTRATE JUDGE**  
**TO EXERCISE JURISDICTION**

I HEREBY ACKNOWLEDGE RECEIPT OF 2 COPIES OF AO FORM 85.

9-25-06  
(Date forms issued)

  
(Signature of Party or their Representative)

Chris Warmick  
(Printed name of Party or their Representative)

Note: Completed receipt will be filed in the Civil Action